Art Unit: 1648

Please add the following new claims:

- --31. The protein of claim 1 wherein the protein is derived from the +1/-2 overlapping reading frame.
- 32. The protein of claim 31 wherein the protein has a length of at least about 126 amino acids.
- 33. The protein of claim 1 wherein the protein is derived from the -1/+2 overlapping reading frame.
- 34. The protein of claim 33 wherein the protein has a length of about 10 to at least about 50 amino acids.
- 35. A vaccine for immunizing a mammal against hepatitis C comprising at least one protein of claim 1 in a pharmacologically acceptable carrier.
- 36. A method of preventing hepatitis C, the method comprising administering the vaccine of claim 35 to a mammal in an amount effective to stimulate the production of a protective antibody.
- 37. A DNA vaccine for immunizing a mammal against hepatitis C comprising a DNA sequence that encodes for at least one protein of claim 1 in a pharmacologically acceptable carrier.
- 38. A method of preventing hepatitis C, the method comprising administering the vaccine of claim 37 to a mammal in an amount effective to stimulate the production of a protective antibody.
- 39. A composition comprising the protein of claim 1 and an excipient, diluent or carrier.

- Art Unit: 1648
- 40. A method of preventing hepatitis C, the method comprising administering the composition of claim 39 to a mammal in an amount effective to stimulate the production of a protective antibody.
- 41. Antibodies directed against a hepatitis C virus (HCV) core protein which are elicited by immunizing an animal using a partially purified protein of claim 1.
- 42. The antibodies of claim 41 wherein the antibodies are monoclonal.
- 43. The antibodies of claim 41 wherein the antibodies are polyclonal.
- 44. A method for analyzing HCV antigen in a sample comprising contacting said antibodies of claim 41 with said sample under conditions suitable for said antibodies to form a complex with a hepatitis C virus (HCV) antigen protein, and detecting said complex and thereby determining whether HCV antigen is in said sample.
- 45. A method for detecting hepatitis C virus (HCV) antibodies in a sample, comprising contacting the protein of claim 1 with said sample under conditions which allow binding of said protein with antibodies directed against an HCV antigen in said sample to form a antigenantibody complex, and then detecting said antigen-antibody complex.
- 46. The method of claim 45 wherein the method is carried out by solid phase-immunoassay.
- 47. The method of claim 45 characterized by using an enzyme or isotope substance as a label.
- 48. An enzyme-linked immunosorbent assay (ELISA) for detecting hepatitis C virus (HCV) antibodies in samples, which comprises: a) coating the protein of claim 1 onto a solid phase, b) contacting a sample suspected of containing HCV antibodies with said polypeptide coated onto the solid phase under conditions which allow the formation of an antigen-antibody complex, c) adding an anti-human antibody conjugated with an enzyme label to be captured by said antigenantibody complex bound to the solid phase, and d) detecting the captured label and determining whether the sample has HCV antibodies. --